



#17

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No. Q58584

ALONI, ERAN, et al.

Appln. No. 09/475,147

Group Art Unit: 2153

Confirmation No. 6007

Examiner: Yasin M. Barquadle

Filed: December 30, 1999

For: **SYSTEM AND METHOD FOR NOTIFICATION OF AN EVENT**

DECLARATION UNDER 37 C.F.R. § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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APR 23 2004

Technology Center 2100

Sir:

I, Eran Aloni, hereby declare and state:

I am a joint inventor of the invention entitled "System And Method For Notification Of An Event", disclosed and claimed in U.S. Application No. 09/475,147 filed on December 30, 1999 (hereinafter the "'147 application"), which is a Continuation-in-Part Application of U.S. Provisional Application No. 60/152,362 filed on September 7, 1999.

Prior to July 20, 1999, in Israel (a WTO member country), I, along with my co-inventor, had invented the invention as described and claimed in the above-identified applications, and pursued the present invention in the ordinary course of business, including preparing the above-identified patent applications, until the filing of the above-identified applications, as evidenced by the following:

DECLARATION UNDER 37 C.F.R. § 1.131
U.S. Application No. 09/475,147
Attorney Docket No. Q58584

Prior to July 20, 1999, I received an e-mail¹ dated June 21, 1999 from a Mr. Eli Jacobi, at which time we were both employed by Comverse, Ltd. (then Comverse Network Systems, Ltd.), the assignee of the '147 application by virtue of an assignment recorded in the U.S. Patent and Trademark Office on April 11, 2000 at Reel 010692, Frame 0766. The e-mail included an attached PowerPoint file² identifying myself as an inventor of "A Method To Perform Enhanced Notification In A Unified Messaging Environment", on which the '147 application was based (see page 8 of the PowerPoint file). The e-mail also included an attached inventor questionnaire³ entitled "Preparatory Questions To The Inventors" to be completed by the inventors, including myself. A purpose of the e-mail dated June 21, 1999 was to schedule a meeting (on June 27, 1999 at 9:00 a.m.) to give a general review of the subject matter of the inventions set forth in the aforementioned PowerPoint file.

Prior to July 20, 1999, I replied to Mr. Jacobi's e-mail dated June 21, 1999 by sending an e-mail⁴ on July 6, 1999. I attached the aforementioned inventor questionnaire, which I completed at least by July 6, 1999, to this e-mail.⁵ The inventor questionnaire completed by me includes, for example, a brief description of the invention.

¹ A copy of this e-mail is attached hereto as Exhibit A.

² A copy of this PowerPoint file is attached hereto as Exhibit B.

³ A copy of this inventor questionnaire is attached hereto as Exhibit C.

⁴ A copy of this e-mail is attached hereto as Exhibit D.

⁵ A copy of this completed inventor questionnaire is attached hereto as Exhibit E.

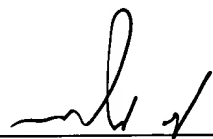
DECLARATION UNDER 37 C.F.R. § 1.131
U.S. Application No. 09/475,147
Attorney Docket No. Q58584

Prior to July 20, 1999, a document entitled "Notification HTTP Protocol", which relates to aspects of the invention, was initiated (version 0) at least by June 14, 1999.⁶ Prior to July 20, 1999, I contributed to this document by preparing an updated version (version 1) at least by July 14, 1999. I continued to make further more minor revisions (versions 1.0.1, 1.0.2, 1.0.3 and 1.0.4) to this document on July 19, July 20, July 26 and July 27, respectively.

In view of the above, and the attached copies of the corresponding documentation, I respectfully submit that I had completed and reduced to practice the system and method for notification of an event as described and claimed in the '147 application prior to July 20, 1999.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 19-April-2004



Eran Aloni

⁶ A copy of this document is attached hereto as Exhibit F.

From: Jacobi, Eli [Eli_Jacobi111@icomverse.com]

Sent: Monday, June 21, 1999 5:31 AM

To: Neishlos, Ruth; Braverman Arie; Gonen, Dror; Keini, Gil; Grosu, Yair; Gluska, Eyal; Khachaturov, Vassili; Weingarten, Jerry; Neystadt, John; Kadish, Shoshana; Cattani, Ariel; Aloni, Eran; Zimmerman, Henry; Gazit, Amir

Cc: Wietchner Meir; Gerlitz, Sachi; Kerbis, Michael; Rothschild, Menashe; Ron, Tamir; Gilon Arik; Gronner Mosh; Zohar Avi; Steinmetz Daphna; Erev, Ari; Levy, Arie; Wolfgor Irit; Inon, Gad; Levy Jimmy; Leven, Daniel; Eshel, Hanoach; Beery, Gidi; Shalev, Daniel

Subject: Patent activity session - the first step

Dear inventor,

You have been identified by your manager as the inventor of the invention indicated below. (See PPT file).

The subject of inventions and the creation of a patent portfolio has been given a very high priority by CNS top management.

Please plan on joining a meeting on Sunday, June 27th at 9:00AM in Rm. 498 in Efrat II.

The agenda is to give a general review of the subject of inventions and intellectual property in general.

We will then start working on the ideas detailed below. An external consultant will be at the meeting, helping us in the process.

The meeting is scheduled for 3 hours. However, based on people time constraints, we may decide after the introduction and the presentation of the first invention to rearrange the meeting in smaller groups, so some of the people will be invited for the latter part of the session.

For the session to be productive and useful, I would like to ask you to do some preparation:

- 1) Please answer the attached questionnaire as thoroughly as you can.
- 2) Please prepare 1-2 foils (prepare 20 copies, and email me the foils in PowerPoint before the meeting so we can project them) - detail in the foil the idea of the invention. (few words to expand on the title mentioned below.)

Questionnaire:

<<Comverse- questionnaire to inventors.doc>>

List of inventions/managers/inventors

<<patent Review.ppt>>


Thanks in advance to everyone,


-- Eli

Eli Jacobi
Director of Technology
Comverse Network Systems
Tel. +972-3-645-4176
Fax. +972-3-645-4088
Email: Eli_Jacobi@icomverse.com

Patent ideas - Hardware

 A method to perform current sharing without N+1 configuration in fault tolerant systems (Avi Zohar, Ruth Neishlos)


 Common card cage cooling system for front and rear boards (Avi Zohar, Arie Braverman)

 A method and apparatus to connect the MVIP bus to SCSCA and H.110 bus using E1 or T1 (Meir Wietchner, Gadi Inon/Dror Gonen)

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June 21, 99

Patent Ideas - DSP

 A method to add background music to a voice message (Mosh Gronner, Gil Keini)

 A method to add sound effects to voice messages (Mosh Gronner, Gil Keini)

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June 21, 99

Patent Ideas - Management

 Entity centric flexible management
framework (Daphna Steinmetz, Yair
Grosu)

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June 21, 99


Patent Ideas - UM Client


 A method to perform 2 phase streaming
voice for recording on a media server
(Menashe Rothschild, Eyal Gluska)


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June 21, 99

Patent Ideas - UM

 A method to achieve load balancing and high availability using DNS (Tamir Ron, Vassily)


 A method to issue voice reply to email for mobile visual mailbox users (Tamir Ron, Jerry)

 A method to create server based virtual inbox for voice mail (aggregator) (Tamir Ron, Jenya)

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June 21, 99

Patent Ideas - Signaling Engine

 Data driven signaling customization
(Meir Wietchner, Shoshana Kadish)

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June 21, 99


Patent Ideas - Netology

 A service creation method to extract web contents (web peeler) (Ariel Cattan)

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June 21, 99

Patent Ideas - Applications

 A method to create a flexible data base
metalanguage (DBI) (Menashe
Rothschild, Amir Gazit)

June 21, 99

CONVERSE CONFIDENTIAL

PREPARATORY QUESTIONS TO THE INVENTOR(S)

THE INVENTORS ARE DEFINED AS THE INDIVIDUALS THAT PROVIDED A SOLUTION TO A SPECIFIC PROBLEM. IT IS PREFERABLE THAT THE LEADING INVENTOR WILL ANSWER THE QUESTIONS.

[1] AN INVENTION IS A SOLUTION TO A PROBLEM. DESCRIBE THE PROBLEM.

[2] DESCRIBE BRIEFLY THE INVENTION. THE EXPLANATIONS CAN BE GIVEN ON THE WHITEBOARD OR ASSISTED BY PRE-PREPARED SCHEMES.

[3] WHAT IS THE IMPACT OF THE INVENTION ON THE PROJECT/ PRODUCT/ TECHNOLOGY.

CAN YOU DEFINE THE INVENTION AS VITAL [] IMPORTANT [] HELPFUL [] ?

[4] WAS THE INVENTION PRACTICED BEFORE IN COMVERSE? ELSEWHERE? HAVE YOU

SEEN THIS SOLUTION IN WRITING IN THE PROFESSIONAL MEDIA? IN A PATENT?

A SIMILAR SOLUTION?

[5] HAVE YOU (OR ANYONE ELSE) SEEN THIS SOLUTION PRACTICED IN A PRODUCT? A SIMILAR SOLUTION? A PRODUCT BY A COMPETITOR?

[6] DO YOU HAVE REGULAR ACCESS TO TRADE MAGAZINES, TECHNICAL ARTICLES? ARE YOU VISITING TRADE SHOWS, OR IS INFORMATION (RELATED TO YOUR FIELD OF

INTEREST) LEAKED TO YOU FROM SUCH SHOWS?

[7] ARE YOU DOING PATENT SEARCHES ON NEW TECHNOLOGIES PRACTICED BY YOU?

IF YES, HAVE YOU FOUND ANY PATENTS RELEVANT TO THE INVENTION?

THE PRESENTATION OF EACH INVENTION WILL TAKE NO MORE THEN 15 MINUTES, FOLLOWED BY A DISCUSSION AND FOLLOW-UP QUESTIONS.

From: Aloni, Eran [IMCEAEX_O=BOSTECH_OU=COMMNET_CN=RECIPIENTS_CN=EALONI@comverse.com]
Sent: Tuesday, July 06, 1999 5:51 AM
To: Jacobi, Eli
Cc: Wolfgor, Irit; Zimmerman, Heny; Rimon, asaf; Neystadt, John; Erev, Ari; Ron, Tamir
Subject: Notification protocol patent

Hi Eli,

This is a preliminary version of the answers to the patents' questionnaire regarding the notification protocol. Please let me know if the answers are clear, if more information is needed, etc. I've tried to keep it as general as possible and not get into details.

I'm forwarding this to some other people who are and/or were involved in the process of defining the protocol. Please send me comments and corrections as soon as possible, so that I can send Eli an updated version by Sunday.

Thanks,
<<Notification protocol patent.doc>>

PREPARATORY QUESTIONS TO THE INVENTOR(S)

THE INVENTORS ARE DEFINED AS THE INDIVIDUALS THAT PROVIDED A SOLUTION TO A SPECIFIC PROBLEM. IT IS PREFERABLE THAT THE LEADING INVENTOR WILL ANSWER THE QUESTIONS.

[1] AN INVENTION IS A SOLUTION TO A PROBLEM. DESCRIBE THE PROBLEM. SEND NOTIFICATION REQUESTS THAT CONTAIN SOME INFORMATION THAT MAY INTEREST THE SUBSCRIBER TO A NOTIFICATION SERVICE THAT WILL DECIDE IF, WHEN AND HOW TO NOTIFY THE SUBSCRIBER OF THIS INFORMATION. IN THE CONTEXT OF VOICE MAIL AND UNIFIED MESSAGING SYSTEM THIS INFORMATION IN THE REQUEST USUALLY DESCRIBES CHANGES A SUBSCRIBER'S MAILBOX STATUS. VARIOUS CLIENTS CAN SEND NOTIFICATION REQUESTS- EMAIL SERVERS, VOICE MAIL SERVER AND OTHER APPLICATIONS.

[2] DESCRIBE BRIEFLY THE INVENTION. THE EXPLANATIONS CAN BE GIVEN ON THE WHITEBOARD OR ASSISTED BY PRE-PREPARED SCHEMES. A PROTOCOL BETWEEN THE CLIENTS AND THE NOTIFICATION SERVICE, THE PROTOCOL ENABLES THE CLIENTS TO DESCRIBE THE EVENT THEY WISH TO REPORT AND DEFINES THE INTERACTION BETWEEN THESE CLIENTS AND THE NOTIFICATION SERVICE. THE PROTOCOL IS IS TEXT-BASED, AND IS IMPLEMENTED OVER THE HTTP PROTOCOL. THE PROTOCOL IS EXTENDIBLE AND CAN BE USED TO SEND NOTIFICATION REQUESTS DESCRIBING VARIOUS TYPES OF INFORMATION - A NEW MESSAGE IN A SUBSCRIBER MAILBOX, SUBSCRIBER MAILBOX IS FULL, SYSTEM SHUT DOWN ALERT OR EVEN CHANGES IN THE STOCK MARKET, ETC.

[3] WHAT IS THE IMPACT OF THE INVENTION ON THE PROJECT/ PRODUCT/ TECHNOLOGY.

CAN YOU DEFINE THE INVENTION AS VITAL [] IMPORTANT [] HELPFUL [] ? VITAL.

THE PROTOCOL IS THE CORE TECHNOLOGY BY WHICH VARIOUS INFORMATION SOURCES SEND NOTIFICATION EVENTS TO A CENTRALIZED NOTIFICATION SERVICE THAT IMPLEMENTS A UNIFIED PROCESSING LOGIC TO THESE REQUESTS.

[4] WAS THE INVENTION PRACTICED BEFORE IN COMVERSE? ELSEWHERE? HAVE YOU

SEEN THIS SOLUTION IN WRITING IN THE PROFESSIONAL MEDIA? IN A PATENT?

A SIMILAR SOLUTION?

No.

THE CLOSEST THING I KNOW OF IS A FEATURE IN THE IMAP4 PROTOCOL THAT ENABLES THE EMAIL SERVER TO NOTIFY THE CLIENT OF CHANGES IN THE MAILBOX. THERE ARE SEVERAL MAJOR DIFFERENCES BETWEEN THIS IMAP4 FEATURE AND THE NOTIFICATION PROTOCOL:

- **IMAP4 IS A PROTOCOL USED BY EMAIL CLIENTS TO REVIEW THEIR MAILBOX ON THE EMAIL SERVER AND IS CAPABLE OF NOTIFYING OF NEW MESSAGES ONLY. THE NOTIFICATION PROTOCOL IS NOT LIMITED TO RECEIVING INFORMATION FROM EMAIL SERVERS, AND IS MUCH MORE GENERAL IN ITS CAPABILITY TO DESCRIBE EVENTS FROM ALL SORTS.**
- **IMAP4 REQUIRES KEEPING AN OPEN SESSION BETWEEN THE CLIENT AND THE SERVER. THE NOTIFICATION PROTOCOL DOES NOT REQUIRE THAT, A SESSION IS ESTABLISHED ONLY WHEN THERE'S SOMETHING TO REPORT.**

[5] HAVE YOU (OR ANYONE ELSE) SEEN THIS SOLUTION PRACTICED IN A PRODUCT? A SIMILAR SOLUTION? A PRODUCT BY A COMPETITOR?

No

[6] DO YOU HAVE REGULAR ACCESS TO TRADE MAGAZINES, TECHNICAL ARTICLES? ARE YOU VISITING TRADE SHOWS, OR IS INFORMATION (RELATED TO YOUR FIELD OF

INTEREST) LEAKED TO YOU FROM SUCH SHOWS?

WE HAVE SOME ACCESS TO THE RELEVANT TECHNICAL INFORMATION. THE EXISTANCE AND PARTIAL SPECIFICATION OF THE PROTOCOL ARE KNOWN TO SOME COMPANIES WITH WHICH COMVERSE IS DISCUSSING POSSIBLE COOPERATION RELATED TO THE MATTER. ALL COMPANIES HAVE SIGNED NDAs WITH COMVERSE, AND THE INFORMATION WAS MARKED "CONFIDENTIAL".

[7] ARE YOU DOING PATENT SEARCHES ON NEW TECHNOLOGIES PRACTICED BY YOU?

IF YES, HAVE YOU FOUND ANY PATENTS RELEVANT TO THE INVENTION?

No

THE PRESENTATION OF EACH INVENTION WILL TAKE NO MORE THEN 15 MINUTES, FOLLOWED BY A DISCUSSION AND FOLLOW-UP QUESTIONS.

Unity

Notification HTTP Protocol

Document ID: Q:\Notification\Requirements\103

File Name: 103_NotificationProtocol.doc

Ver.	Date	Author	Description	Approved By	Approval Date
0	14/6/99	Henry Z.	First issue		
1.0	14/7/99	Eran Aloni	Updates and structural changes.		
1.0.1	19/7/99	Eran Aloni	Updates to conform with HTTP/1.1 conventions		
1.0.2	20/7/99	Eran Aloni	After some remarks. Added the NumOfAttachments and AttachmentNames fields.		
1.0.3	26/7/99	Eran Aloni	Added a remark regarding mailbox full fields (enabling sending deactivation of the mailbox full flag) Added a remark in the MailboxName attribute		

1.0.4	27/7/99	Eran Aloni	Added the MailboxFull on/off requirement. Added requirements regarding error statuses in section 7.		
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Reservations for Approval

No.	Meeting Minutes ID	Section	Comments

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1. Purpose

The purpose of this document is to define the notification protocol and is intended to be used both by CNS employees and by 3rd parties that develop applications that needs to be able to send notification requests.

1.1 Applicable Documents

[1] RFC 2616 - HTTP/1.1 (<http://info.internet.isi.edu:80/in-notes/rfc/files/rfc2616.ps>)

2. Introduction

Each client of the notification service will have to use this protocol in order to send notification requests to the notification service. The protocol is based on HTTP as its transport protocol.

The notification protocol defines the requests that the client can send to the notification service and what information items are mandatory or optional in each request. It also describes the behavior of the client and the notification service regarding error handling, retries, etc.

Upon receiving a request, the notification service parses it and processes the request. After processing the request the notification service MAY send a notification message to one or more subscribers.

3. Terminology and Acronyms

NSrv	-	Notification Service
HTTP	-	HyperText Transfer Protocol (relates to version 1.1)
Client	-	An application that sends notification requests

3.1 Requirements phrasing

The terminology in this document uses the standard keywords usually used in RFC documents (MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY and OPTIONAL) as described in RFC 2119.

An implementation of this protocol is not compliant if it fails to satisfy one or more of the MUST or REQUIRED requirements. An implementation is "unconditionally compliant" if it satisfies all the MUST, REQUIRED and SHOULD requirements. An implementation is "conditionally compliant" if it satisfies all MUST requirements, but fails to satisfy at least one SHOULD requirement.

4. Notification HTTP Protocol Specification

4.1 HTTP Protocol version

The Client SHOULD use the HTTP protocol version 1.1 in order to be able to maintain a persistent connection with the HTTP server. Using persistent connections allows the client to work more efficiently and use a single TCP connection for pipelining requests (sending several requests asynchronously).

4.2 Client Application Requirements

4.2.1 Sending requests

The HTTP commands that will be supported by the Notification HTTP Protocol are 'GET' and 'POST'.

4.2.2 HTTP port

The port to be used between the client and the notification service is fixed and would usually not be the standard port used for HTTP communications.

Denote this port by <NSrv Port>

4.2.3 The notification service URL

The URL the client sends requests to MUST be agreed upon between the client and the notification service and is part of the configuration of the service (e.g. if NSrv Port = 8080 then the URL is: <http://notification.icomverse.com:8080/notify.cgi>).

Denote this URL by <NSrv URL>.

4.2.4 Notification request format

A notification request MUST comply with the general format of a URI (Universal Resource Identifies) as defined in RFC 2616. It is composed from the notification service URL and several attribute names and their values. The detailed description of attribute names and legal values is described in detail in section 7 below.

Assuming there are 3 attributes (a1, a2, a3) and 3 values (v1, v2, v3), the format of the request that the client would send is:

<NSrv URL>?f1=v1&f2=v2&f3=v3.

Attribute values MUST conform to the standard encoding of HTTP commands - e.g. a blank should be changed to a '+' sign, etc.

4.2.5 Synchronization and Avoiding race conditions

The order of processing notification requests for a certain subscriber is very important. Otherwise, the notification service may send the notification messages in the wrong order, and may give the subscriber the wrong information regarding his mailbox status.

The following describe the client's behavior in order to avoid these situations.

4.2.5.1 Sending order

The client MUST always send notification requests in the same order as the events that triggered them.

4.2.5.2 Synchronous sending

In case the client wishes to send several notification requests for the same subscriber in a short period of time, the client SHOULD wait for the notification service to respond by an Ack after sending each request before sending the next request for the same subscriber.

4.2.5.3 Asynchronous sending

If the client does not comply with 4.2.5.2 above, there MAY be cases where the notification service would send notification messages in the wrong order. In order to minimize the damage, the client MUST make sure that all the attributes regarding the mailbox status (see below) contain the most up-to-date data.

For example, if a subscriber had no new messages in his mailbox, and he had just got two new messages and the email server (i.e. the client) wishes to send two separate notification requests. The client MUST indicate in both requests that the subscriber has two new messages (rather than the first request would indicate one new message, and the second would indicate two)

4.2.6 Retries

The client MAY perform retries when a server error occurred or when the notification service is temporarily unavailable (See 5.1 - Status codes). The client SHOULD determine the number of times it tries to re-send the request.

When re-sending a request, the client MUST update the information in the request in order to ensure it contains the up-to-date information.

4.2.7 Mailbox Full on/off

A notification client SHOULD send notification requests when a subscriber's mailbox is full (i.e. MailboxCapacity > MailboxCapacityThreshold).

If a client application implements the sending of notification requests when the subscriber's mailbox is full, it MUST also send a notification request when the capacity of the mailbox has changed and is not considered to be full any more (i.e. MailboxCapacity <= MailboxCapacityThreshold)

See paragraph 7.3 for the appropriate request attributes.

5. Notification service requirements

5.1 Status codes

Status codes are sent from the HTTP server or from notification service to the client as a response for each request.

The status codes returned by the notification service comply with the status codes defined in the HTTP/1.1 protocol (RFC 2616, section 10).

When applicable, the notification service will use standard status codes. The notification service MAY use proprietary status codes, as long as they comply with the standard classification of status codes according to their numbering convention (see below).

5.1.1.1 Informational (1xx) status codes

The notification service will not send, at this stage, any informational status codes and the client MAY ignore all informational status codes sent by the HTTP server and/or by future versions of the notification service.

Informational status code MAY be used in future versions to notify the client whether the notification request resulted in sending a notification message or not.

5.1.1.2 Successful (2xx) status codes

The notification server **MUST** send a "200 OK" status code after it had ensured that the request will be processed without getting lost, or after it the request was successfully processed.

The notification service **MAY** use other (including proprietary) successful status codes. After receiving a successful status code, the client **MUST NOT** perform retries.

5.1.1.3 Redirection (3xx) status codes

N.A.

5.1.1.4 Client error (4xx) status codes

The notification server **MUST** send a client error status code when it finds out that the request format or content are illegal - e.g. illegal attribute name, unknown subscriber ID, etc.

The notification service will usually use the "400 Bad Request" status code, but **MAY** also use other (including proprietary) client error status codes.

All client error status code, except when using the "404 Not Found" status code, indicates that there's either a bug or a configuration error in the system. The client **MUST NOT** perform retries upon receiving one of these status codes as a reply.

5.1.1.4.1 The "404 Not Found" status code

The notification service **MUST NOT** return a "404 Not Found" status code. The HTTP server will return this status code when it cannot find the URI used by the client to describe the request.

Due to the fact that there's no way of telling if the error is permanent or not, the client **SHOULD** treat this status code like a server error status code (see 5.1.1.5 below).

5.1.1.5 Server error (5xx) status codes

The notification service **MUST** return a server error status code when it fails to process the request due to some internal error. The notification service will usually use the "500 Internal Server Error" status code, but **MAY** also use other (including proprietary) server error status codes.

Upon receiving any server error status code the client **SHOULD** perform retries if one of these status codes is sent as a reply (see 4.2.6).

6. Notification Events

Each notification request is a consequence of an event. The supported events are:

- 1) A new message has arrived for a subscriber.
- 2) A subscriber read a message.
- 3) A subscriber deleted a message.
- 4) The server purged a message.
- 5) The subscriber's mailbox is full.

- 6) Update event – This event will be used if a subscriber's mailbox status has changed but the specific reason is unknown, or when a notification client wishes to refresh the mailbox status.
- 7) The subscriber has logged into his mailbox.

7. Notification requests' Attributes

A notification request is composed from several attributes and their values. Some attributes **MUST** or **MAY** appear only when other attributes have specific values (see below).

The notification service **MUST** generate a client error status (See 5.1.1.4 above) if a mandatory attribute is missing.

The notification service will ignore redundant attributes.

7.1 Common attributes

The following table describes attributes that may always appear.

Field Name	Status ¹	Legal values
NotificationProtocolVersion	1	Version ²
ApplicationName	1	String
ApplicationVersion	1	Version
ServerName	1	String
MailboxName	1	String
EmailAddress	0	Email
SubscriberId	0	Integer >=0
EventId	0	Integer >=0
TotalNumOfMsgs	1	Integer >=0
TotalNumOfNewMsgs	1	Integer >=0
TotalNumOfNewUrgentMsgs	1	Integer >=0
EventType	1	One of the following strings: 1. NewMsg 2. ReadMsg 3. DeleteMsg 4. PurgeMsg 5. MailboxFull

¹ '1' – Mandatory, '0' – Optional

² Version format is a sequence of four integers separated by dots (e.g. 1.0.0.0).

6. Update

7. Login

In case the SubscriberID attribute is missing, the notification service would use the ServerName and MailboxName attributes to get the subscriber's ID. It is possible that more than one subscriber uses the same mailbox.

7.2 NewMsg attributes

The following table describes attributes that may only appear if EventType is 'NewMsg'.

Field Name	Status	Legal values
MessageType	1	One of the following strings: 1. Email 2. Voice 3. Fax 4. VoiceFax
MessageId	0	IMAP4 message ID (8 byte string)
FirstNew	0	Yes/No - default is No
Confidential	0	Yes/No - default is No
ReplyRequested	0	Yes/No - default is No
Urgent	0	Yes/No - default is No
From	1	String
To	1	String
CC	0	String
Subject	1	String
Time	1	MM/DD/YYYY HH:MM:SS
Body	0	String
NumOfAttachments	0	Integer ≥ 0
AttachmentNames	0	String

7.3 MailboxFull attributes

The following table describes attributes that may only appear if EventType is 'MailboxFull'

Field Name	Status	Legal values
MailboxCapacity	0	$0 \leq \text{Integer} \leq 100$

MailboxCapacityThreshold	0	$0 \leq \text{Integer} \leq 100$
MailboxFullStatus	1	String

If MailboxCapacity > MailboxCapacityThreshold --> Mailbox is full

If MailboxCapacity <= MailboxCapacityThreshold --> Mailbox was full, but it is not full any more (capacity is now below threshold)